IBC Management and Biosafety Program Management Refresher Course

Alliance Biosciences

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What do you consider your role as an IBC member?

- Are you familiar with the NIH Guidelines?
- Are you aware of problems that have come to light at other institutions relative to the conduct of research?
- Do you feel that serving on the IBC is a burden or a privilege?
- Who are you representing in your review of research? The public, the University, the research community, the environment, your children, your lab?

Agenda

- Background of NIH Guidelines
  - Why do we have an IBC?
- Expectations for the IBC
  - Implicit and implied
- IBC Handbook (written)
- BSO and the IBC
- Concept of a “Research Compliance” Group
- IBC and infectious agent reviews
- NIH visits and observations

A "Short" History

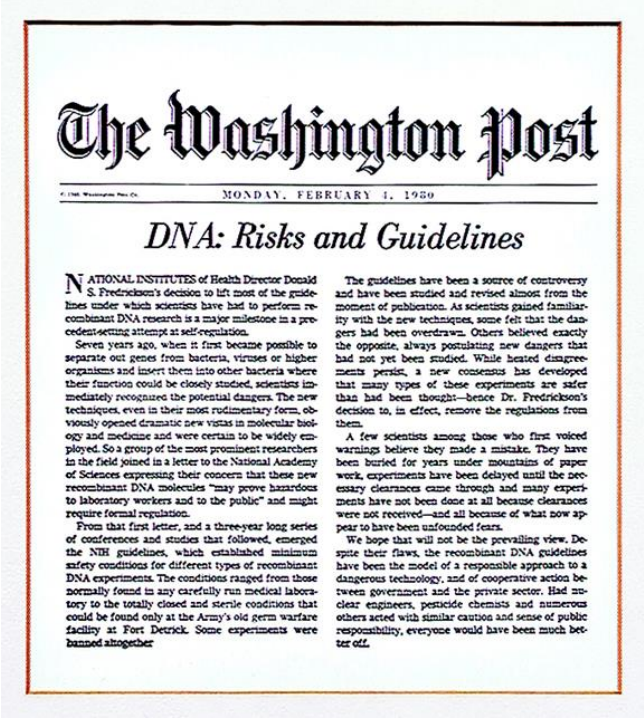
- Emergence of recombinant DNA (rDNA) technology (1970s)
- Concerns among scientists and general public
  - Public health and safety
  - Environmental impact
  - Potential ethical and social implications
- July 1974 National Academy of Science report called for
  - moratorium on some experiments
  - development of NIH guidelines for conduct and review of rDNA experiments

Short History, continued

- 1975 Asilomar Scientific Summit called for establishment of oversight committee
- July 1976 First NIH Guidelines published
  - Local oversight, review by institutional "Biohazards" committee
    - Included review of containment and facilities
    - Consideration of local circumstances
- Local communities responded with local oversight
  - Cambridge, Boston

1978 Revision

- Relaxed some restrictions
- Local oversight and public participation key
  - No less than 20% of committee to represent the general public
  - “Important” records to be publicly available
    - Reports of violations, malicious use reports, other materials submitted to NIH
- Major actions only on advice of Recombinant Advisory Committee (RAC) and public/Federal agency comment



The Washington Post

MONDAY, FEBRUARY 1, 1980

DNA: Risks and Guidelines

NATIONAL INSTITUTES of Health Director Donald S. Fredrickson's decision to lift most of the guidelines under which scientists have had to perform recombinant DNA research is a major milestone in a precedent-setting attempt at self-regulation.

Seven years ago, when it first became possible to separate out genes from bacteria, viruses or higher organisms and insert them into other bacteria where their function could be closely studied, scientists immediately recognized the potential dangers. The new techniques, even in their most rudimentary form, obviously opened dramatic new vistas in molecular biology and medicine and were certain to be widely employed. So a group of the most prominent researchers in the field joined in a letter to the National Academy of Sciences expressing their concern that these new recombinant DNA molecules "may prove hazardous to laboratory workers and to the public" and might require formal regulation.

From that first letter, and a three-year long series of conferences and studies that followed, emerged the NIH guidelines, which established minimum safety conditions for different types of recombinant DNA experiments. The conditions ranged from those normally found in any carefully run medical laboratory to the totally closed and sterile conditions that could be found only at the Army's old germ warfare facility at Fort Detrick. Some experiments were banned altogether.

The guidelines have been a source of controversy and have been studied and revised almost from the moment of publication. As scientists gained familiarity with the new techniques, some felt that the dangers had been overdrawn. Others believed exactly the opposite, always postulating new dangers that had not yet been studied. While heated disagreements persist, a new consensus has developed that many types of these experiments are safer than had been thought—hence Dr. Fredrickson's decision to, in effect, remove the regulations from them.

A few scientists among those who first voiced warnings believe they made a mistake. They have been buried for years under mountains of paperwork, experiments have been delayed until the necessary clearances came through and many experiments have not been done at all because clearances were not received—and all because of what now appear to have been unfounded fears.

We hope that will not be the prevailing view. Despite their flaws, the recombinant DNA guidelines have been the model of a responsible approach to a dangerous technology, and of cooperative action between government and the private sector. Had nuclear engineers, pesticide chemists and numerous others acted with similar caution and sense of public responsibility, everyone would have been much better off.

Over the Years…

- 1984 – IBCs to review human gene transfer research
- 1986– Addition of “Points to Consider” guidance doc for gene therapy protocols
- 1989-1990 – first human gene transfer protocols approved, Appendix “M” added to Guidelines
- 1994 – Adoption of Appendix P (plants) and Q (animals)
- 2000 – Recombinant Advisory Committee (RAC) review of gene transfer protocols prior to IBC approval

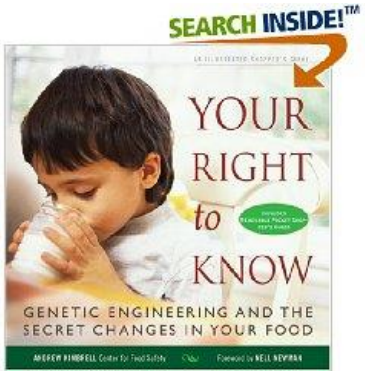
Recently

- 2002--Tightening of human gene transfer adverse event reporting, maintenance of subject confidentiality in event reporting, trade secret confidentiality, etc.
- 2009
  - Added rDNA work with influenza viruses to Guideline
  - Updated references to current 5th edition of BMBL (Biosafety in Microbiological and Biomedical Laboratories)

Is the IBC review still necessary?

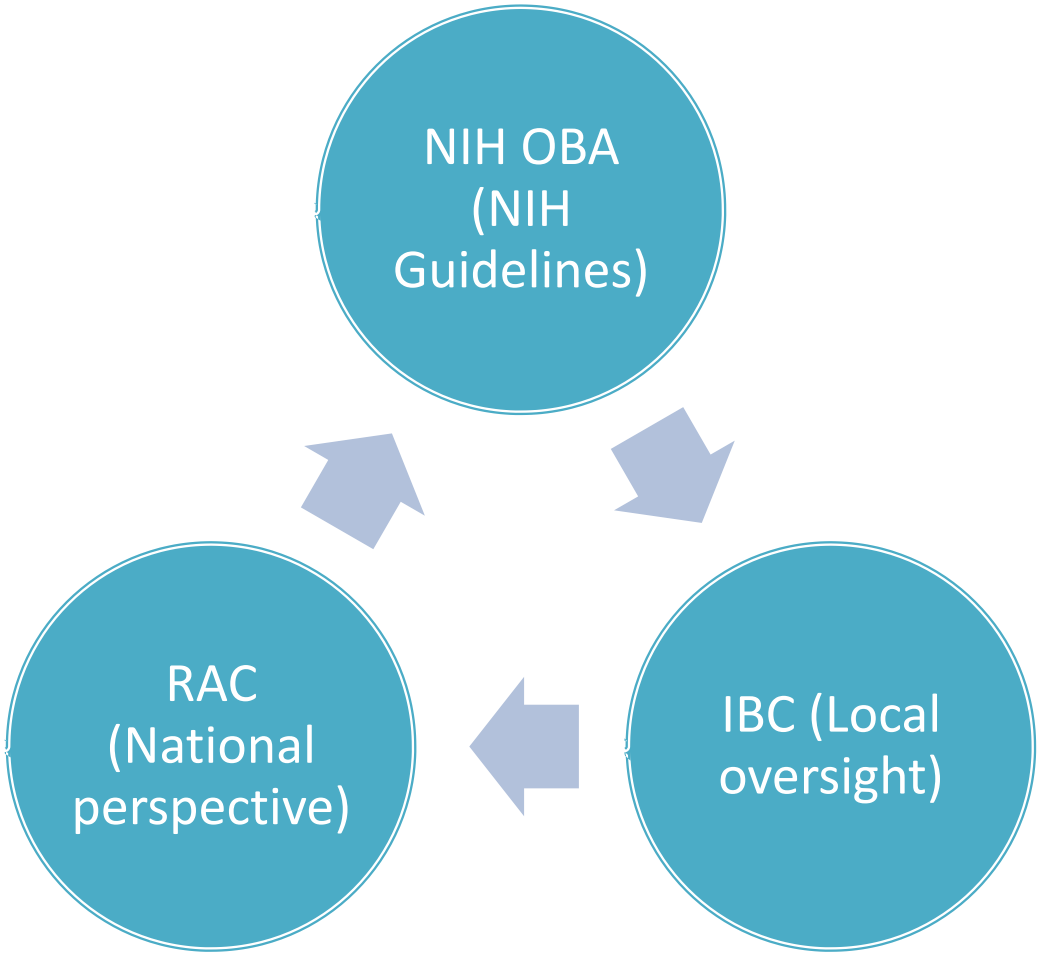
- Many of the catastrophic dangers originally feared never materialized
  - The Guidelines have changed to respond to this factor
  - The RAC no long reviews/approves most basic protocols
- Local review is still important to ensure biological safety (medical, occupational, environmental) and responsible scientific practice
- The products of recombinant techniques can have unpredictable characteristics that are unlike the source or host organisms
  - This unpredictability warrants a local case-by-case assessment

However,



- The public here and abroad is still concerned about many aspects of this technology
  - Genetically modified milk, corn, tomatoes, beef, etc.
  - 1999, Jesse Gelsinger, the first fatality in a gene therapy experiment, was reported in *Nature*
  - "NIMBY" for high containment facilities (Boston, Seattle, Hamilton MT)
  - 2009 public hearings on Capital Hill relative to risks of research
- The review process has, in general, allowed the science to move forward
- Human gene transfer continues to raise many safety, ethical, scientific issues in need of public discussion

IBCs and NIH – Partners in rDNA oversight



Levels of rDNA Oversight

- FEDERAL
  - HHS (Health and Human Services)
    - NIH
      - OBA (Office of Biotechnology Activities)
      - OHRP (Office for Human Research Protections)
    - USDA
    - EPA
    - FDA
- LOCAL (NONFEDERAL)
- Institutional:
  - IBCs
  - IACUCs
  - IRBs
- Investigators
- Private sponsors

IBC Charter

- Established under the NIH Guidelines specifically for the review of rDNA research
- Often review other biohazardous research
  - Infectious agents, Select Agents, toxins, etc.
  - Broader purview is a matter of institutional discretion
    - However, there is an expectation by government that Select Agent/toxin work will be reviewed by an institutional body
- Membership
  - ≥ 5 members, including ≥ 2 outside members
  - BSO (Biological Safety Officer) member if research is large scale or BSL3/4.
  - Laboratory technical staff person (recommended)

IBC Expertise

- Expertise in
  - rDNA technology (collectively)
  - Assessment of risk to environment and public health
  - Biological safety and physical containment systems
  - Plant and animal use, if appropriate
- Knowledge of
  - Institutional commitments and policies
  - Applicable law
  - Professional standards
  - Community attitudes

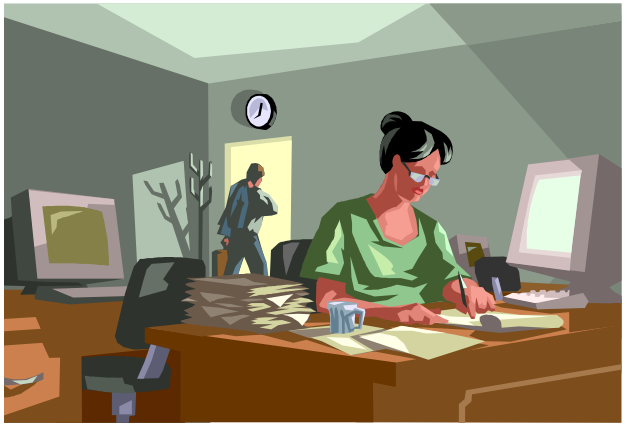
Membership

- Outside members
  - Representatives of community interests with respect to health and protection of the environment
- Not allied with the institution

- Ad hoc consultants
  - May be used when reviewing research outside the expertise of the IBC membership
  - Often used for human gene transfer research

IBC Staffing

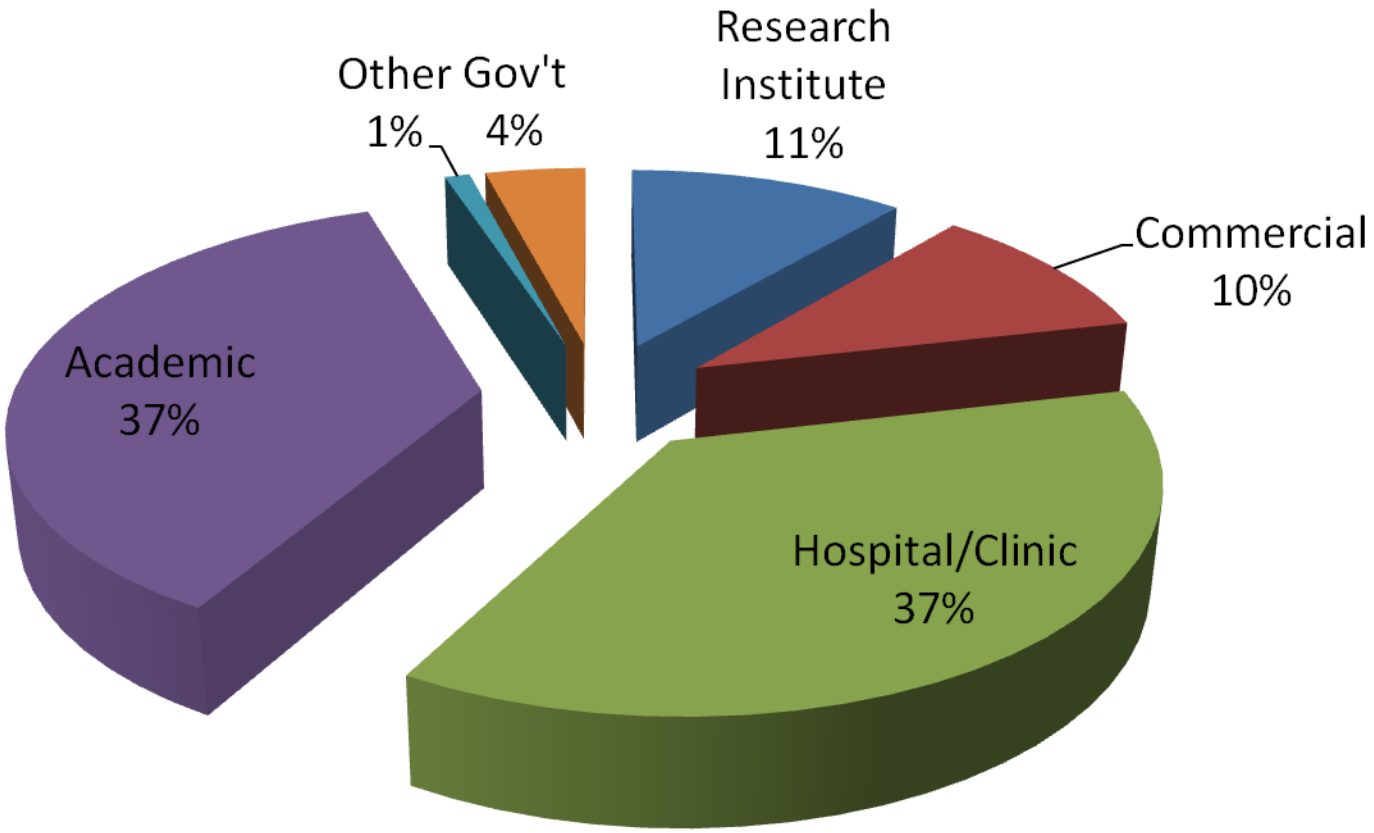
- Not specifically prescribed in the Guidelines
  - BSO (except for previously described)
  - IBC Administrator
  - Compliance Officer/Office of Research Compliance
  - Manager of EHS
  - Employee health physician/nurse
  - Legal representative
  - Public relations representative



Registering an IBC

- Any institution that receives NIH funding is subject to the NIH Guidelines and must:
  - Register with OBA
  - File annual membership updates
    - Roster of current IBC members
      - Indicating Chair, contact person, special expertise as applicable (BSO, plant expert, animal expert, etc.)
      - Includes biographical sketches of all members
- Purpose of registration and annual update:
  - Provides assurance of local review of biosafety risks
  - OBA assured that IBC expertise is consistent with NIH Guidelines

IBCs Registered with NIH OBA
December 2009



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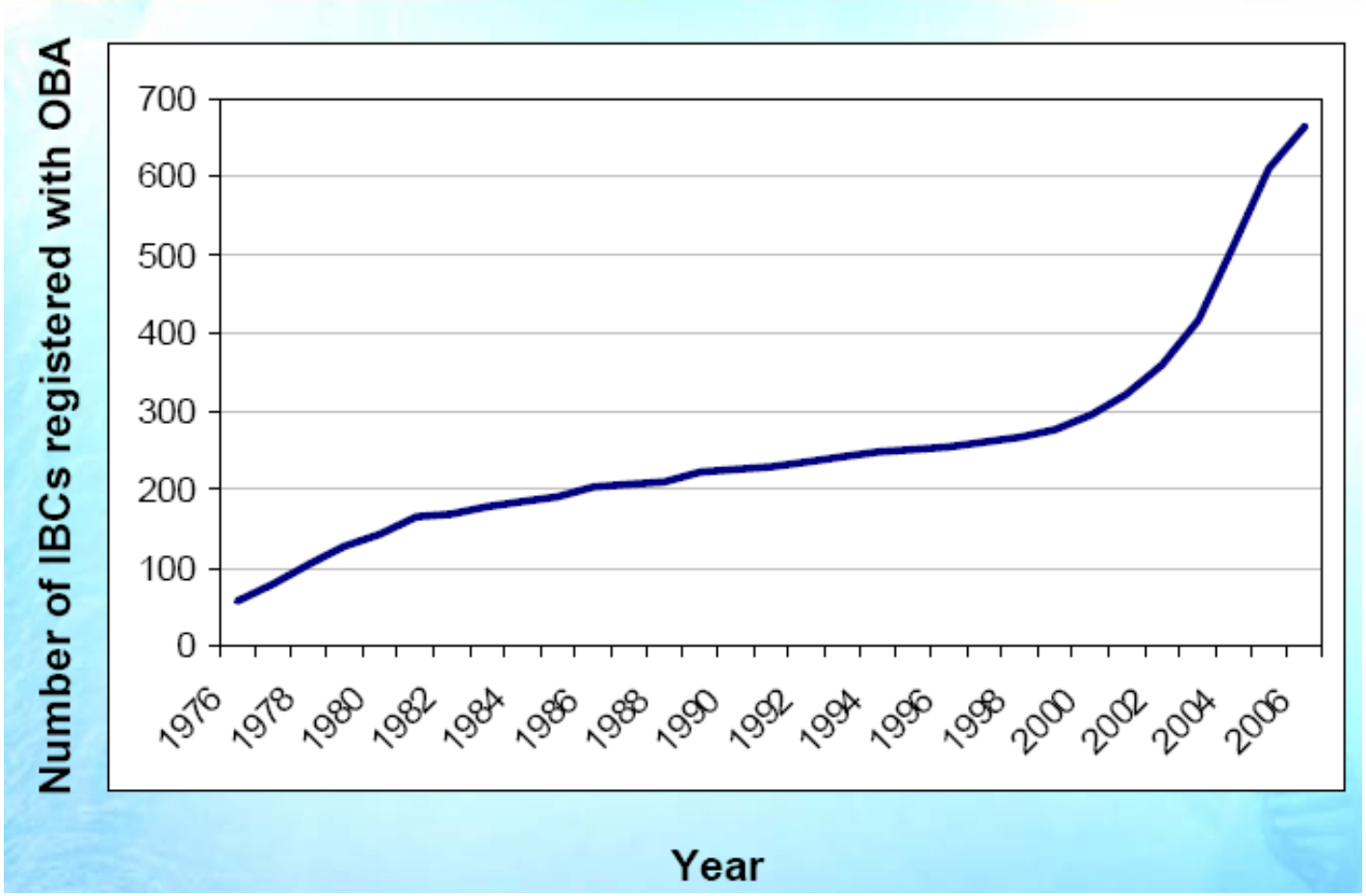
Growing Significance of IBCs



Growing Significance of IBCs

- rDNA research has grown in volume and complexity
  - NIH budget has doubled in the last 10 years (to >$29 billion)
  - Expanding programs of research
    - Biodefense
    - Emerging infectious diseases (SARS, Avian Influenza, etc.)
  - New technologies
    - Genome synthesis (e.g., polio)
    - Reverse engineering of historical pathogens (1918 influenza)
    - Novel approached to human gene therapy
  - NIH Guidelines are being revised to deal with these new considerations

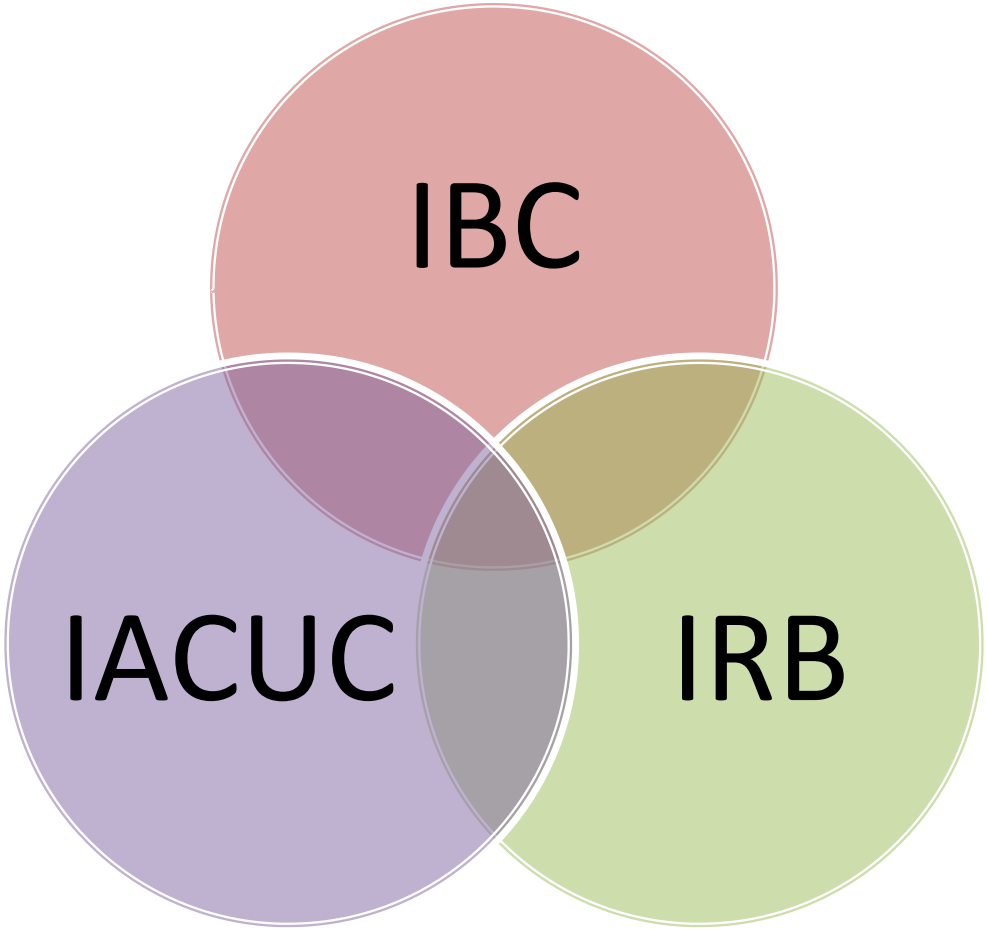
Growing significance of IBCs

- IBCs are increasingly being assigned additional review tasks:
  - Select Agents
  - Research utilizing bloodborne pathogens
  - Xenotransplantation (cross species transplantation)
  - Stem cell research
  - Possible role in “Dual Use” research oversight (more later)

IBC Responsibilities

- In a nutshell, what must IBCs review:
  - Recombinant DNA research for conformity with NIH Guidelines
  - Potential risk to environment and public health
    - Containment levels
    - Adequacy of SOPs (Standard Operating Procedures), facilities, PI and lab personnel training
    - Institutional and investigator compliance
      - Reporting of spills, exposures, misuse, theft
      - Adverse events

Institutional Oversight Committees



Oversight Committees

- Interactions between the institutional committees are not prescribed in NIH Guidelines, however,
  - BMBL, ed. 5, has a new requirement for ABSL-1 through 4 work:
    - "Prior to beginning a study animal protocols must also be reviewed and approved by the Institutional Animal Care and Use Committee (IACUC) and the Institutional Biosafety Committee."
  - The institution should determine how best to implement this requirement (and document that procedure).

For rDNA research involving animals:

- IACUC Review
  - Animal welfare
    - Pain and distress from adverse phenotypes (behavioral, anatomical and physiological abnormalities)
    - Risks to other animals in the facility from the inadvertent spread of vectors
- IBC Review
  - Risks to human health
    - Transfer of genetically altered material, viral vectors, etc.
  - Risks to the environment
    - Escape and establishment in the wild
    - Interbreeding with wild stock
    - Consumption with other animals
    - Appropriate disposal of wastes

The importance of IBCs/BSOs to PIs

- The IBC and BSO can help:
  - Ensure that rDNA is being safely handled and discarded
  - Meet all compliance requirements associated with NIH funding for research involving rDNA
    - Avoid withdrawal of funding for the PI and/or the institution
  - Avoid preventable accidents and incidents that may cause harm or undermine public confidence in your research
    - Tularemia incidents at Boston University 2004
    - Texas A&M Brucella infections with “Madison” chamber 2007
  - Obtain biosafety advice on an ongoing basis

IBC Handbook

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IBC SOPs

- Per Allen Shipp (NIH) January 6, 2010
  - “Comprehensive SOPs help ensure that IBCs and others with biosafety responsibilities fulfill their duties consistently and correctly.”
  - “SOPs can also facilitate successful training by articulating clear performance expectations.”

IBC Handbook Recommendations

- IBC Operational SOPs:
  - Affirmation of institutional support for compliance with NIH Guidelines
  - Explanation of what add'l types of research IBC will review (infectious agents, Select Agents and toxins, etc.)
  - Method for appointment of IBC members, rotation of chair, length of time as committee member
  - Attendance expectations for IBC members
  - How meetings will be conducted (face-to-face or video teleconference is recommended), voting, use of Robert's Rules of Order

IBC Handbook

- IBC Operational SOPs
  - What constitutes a quorum for IBC meetings where members will vote on protocols for review
  - Affirmation that the IBC will not authorize start of experiments which are not explicitly covered by the Guidelines until NIH establishes the containment required
  - Provision for periodic review of all research protocols
  - Policy for inspection of laboratories
  - Provision for ongoing training of IBC members, PIs, laboratory staff, BSO

IBC Handbook

- IBC Operations
  - Policy on notification of the public and open meetings (recommended)
  - Policy for recusing members from voting when a conflict of interest exists
  - Definition of what constitutes “Administratively” approved protocols by BSO/Chair, etc.
  - Wording that requires the training of PIs and laboratory personnel and delineates PI’s responsibility

IBC Handbook, continued

- Voting and Approval SOPs
  - Types of approval for protocols (e.g., approved, approved with conditions, tabled, rejected)
  - Explanation of how PIs will be notified of IBC decisions concerning protocols, including conditions and Biosafety level
  - Follow up on recommendations for conditional approval, and report back by BSO at future meeting
  - Report of "Administratively" approved protocols given to members and included in minutes
    - Examples: exempt procedures, BSL-1, human-sourced material protocols

IBC Handbook, continued

- SOP for Minutes
  - Contents and distribution of minutes
    - Public access to minutes (recommended)
  - Policy for redacting minutes
    - Acceptable to redact proprietary information, home addresses and telephone numbers of IBC members, specific info whose disclosure would compromise institutional or national security
  - Freedom of Information Requests – who handles, when, how, who is response reviewed by, involvement of Public Relations personnel, etc.
    - FYI – Freedom of Information covers requests for minutes as well as annual update on IBC members, biographical sketches, roles of chair, BSO, experts

IBC Handbook, continued

- Adoption of emergency plans for spills and personnel contamination
- Reporting of spills, releases, illnesses, adverse events to NIH, CDC, etc.
  - Include who will investigate, follow up, who will write reports, timing of reporting, notification of IBC
  - significant problems, violations of the NIH Guidelines, significant research-related accidents and illnesses – report within 30 days

IBC Handbook, continued

- Reporting of spills, releases, illnesses, adverse events to NIH, CDC, etc.
  - Spills/accidents in BSL-2 labs resulting in an overt exposure must be reported immediately to OBA
  - BSL-3 spills/accidents resulting in overt or *potential* exposure must be immediately reported to OBA
  - OBA Incident Reporting Template available from NIH website

IBC Handbook

- SOP covering possible need for health surveillance of personnel involved with rDNA experiments
  - The institution **shall** establish a health surveillance program for:
    - Large scale research or production activities with rDNA in viable organisms at BSL-3
    - Animal research involving viable rDNA microorganisms at BSL-3
  - Workers with certain medical conditions (immune suppression, steroid treatment, pregnancy, etc.) should be evaluated for work with potentially hazardous organisms
    - Implies worker training on hazards of working while immune-suppressed, pregnant…

IBC Handbook, continued

- SOP for dealing with a laboratory that has a lab-associated infection
  - There should be a written procedure for investigating, whether to test co-workers for exposure, retraining of workers, possible shutting down of the lab until breaches are identified, etc.

IBC Handbook, continued

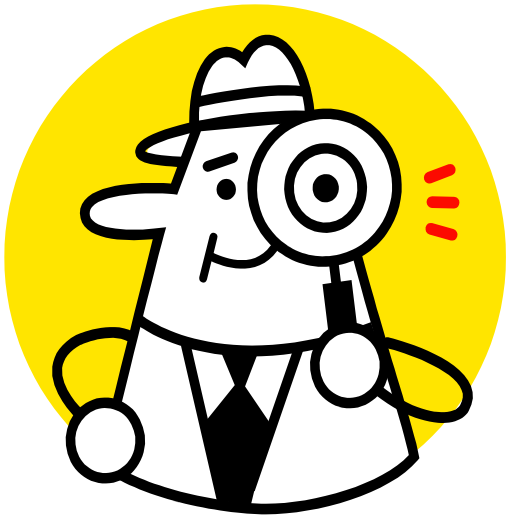
- Procedures for dealing with non-compliance
  - Pre-approved SOP for dealing with a researcher who is working without IBC approval, is doing experiments that are not in the scope of the protocol, has not trained lab staff, does not renew protocols in a timely fashion, does not report laboratory spills or exposures, does not correct laboratory deficiencies in a timely fashion, etc.

IBC Handbook, continued

- Procedure for dealing with non-compliance
  - Other institutions have a written time line for attaining compliance, with escalating consequences for failure to comply. Steps in compliance may involve notification of dept. chair, followed by Dean of the medical school, then President of the university. This sequence of events should be decided before a situation arises, since it can be very contentious.

IBC Handbook

- Ideally, the IBC Handbook would be located on a website dedicated to the IBC
  - Would also have links to the NIH Guidelines, BMBL, IBC protocol review forms, NIH training materials, etc.
  - Many universities post their IBC meeting dates (visible to the public) as well as their forms, SOPs, etc.



Role of the Biosafety Officer to the IBC

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Role of the BSO in the IBC

- A BSO shall be appointed if the institution does large scale research or production of viable organisms containing rDNA (>10 liters), or
- If there is research with rDNA at BSL-3 or BSL-4
- The BSO shall be a member of the IBC
- Duties of the BSO
  - Periodic inspections of labs to ensure standards are rigorously followed
  - Report to IBC and institution any significant problems, violations, research-related accidents/illnesses
    - Unless report already filed by PI

BSO Duties, continued

- Develop emergency plans for spills, personnel contamination, investigation of accidents (involving rDNA)
- Provide advice on lab security and technical advice to PIs and IBC on research safety procedures
- The BSO and/or the IBC Chair may review protocols to determine which are exempt from IBC review, but they cannot approve protocols that require IBC review
  - E.g., Risk Group 2/3 rDNA put into other organisms, rDNA materials put into animals, etc. These types of experiments require IBC review and approval before commencing.

BSO Duties

- Other duties often given to the BSO:
  - Follow up on conditional approval of protocols
  - Reporting back to the IBC on “administratively” approved protocols that do not require full IBC review (human sourced material protocols, BSL-1 protocols, exempt protocols)
- NOTE: the NIH Guidelines does not require that the BSO coordinate IBC meetings, attendance, generate minutes, pre-review protocols for completeness and errors, etc. That disposition is at the discretion of the institution (and could be handled by a “Research Compliance” group).

Research Compliance Group

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Research Compliance Group

- Many institutions utilize a “Research Compliance” Group for IBC, IACUC, IRB tasks
- Manned by compliance-trained personnel
  - Schedule meetings and write agendas
  - Generate minutes
  - Pre-review proposals for completeness and errors
  - Track/file proposals by number and revisions

Research Compliance Group

- Send PI notification letters of Committee decisions
- Follow up on conditional approvals
- Draft SOPs with input from experts
- Maintain websites for the committees
- Schedule periodic review of labs and protocols

Exempt Research

- Who determines what research is exempt? The PI? The BSO? The IBC?
  - Matter of institutional policy
    - Method of determination, who is responsible, etc. should be in the IBC Handbook
    - NIH guidance does comment that BSO can review protocols to determine which are exempt
  - NIH OBA can help with determinations

The Real “Meat” of the IBC Charter

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Scope of the Guidelines

- Specifies practices for construction and handling
  - rDNA molecules
  - Organisms and viruses containing rDNA molecules
- Definition
  - Constructed outside living cells by joining natural or synthetic DNA segments to DNA molecules that can replicate in a living cell
  - Molecules resulting from the replication of those described above

NIH Guidelines

- Apply to rDNA research that is
  - Funded by NIH
  - Performed at or sponsored by an institution that receives any NIH funding for rDNA research
- Are the NIH Guidelines optional?
  - Potential consequences for non-compliance:
    - Suspension, limitation or termination of NIH funds for rDNA research at the institution (and not just for the offending researcher!)
    - A requirement for prior NIH approval of any or all rDNA projects at the institution

Guidelines – Section II

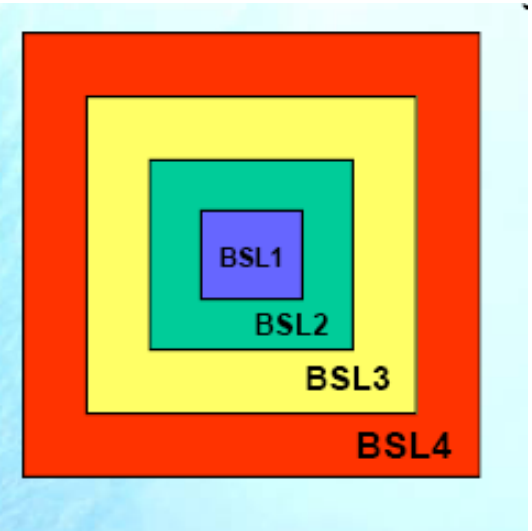
(Safety) Risk Assessment

RG 1	RG 2	RG 3	RG 4
Agents that are not associated with disease in healthy adult humans	Agents that are associated with human disease which is rarely serious and for which preventive or therapeutic interventions are *often* available	Agents that are associated with serious or lethal human disease for which preventive or therapeutic interventions *may be* available (high individual risk but low community risk)	Agents that are likely to cause serious or lethal human disease for which preventive or therapeutic interventions are *not usually* available (high individual risk and high community risk)

Guidelines – Section II

(Safety) Containment

- Physical Containment (Appendix G)
  - Work Practices
  - Equipment and Facilities
- Biological Containment (Appendix I)
  - Survival of the host-vector system outside the laboratory
  - Transmission of the vector to other non-laboratory hosts



Guidelines – Section III

Levels of Review

Level of review	Example of recombinant DNA research involving animals	Relevant section(s) of the *NIH Guidelines*
IBC, RAC review, and NIH Director review and approval	Experiments that compromise the control of disease agents in medicine through deliberate transfer of a drug resistance trait	III-A
IBC approval and NIH review for containment determinations	Experiments conducted with a recombinant DNA modified restricted agent in a whole animal	III-B
IBC and IRB approval and NIH review before research participant enrollment	Not applicable	III-C
IBC approval before initiation	Creating stable germline alterations of an animal's genome, or testing viable rDNA modified microorganisms on whole animals, where BL-2 containment or greater is necessary	III-D
IBC notice at initiation	Creating stable germline alterations of rodents using recombinant DNA when these experiments require only BL-1 containment	III-E
Exempt from the *NIH Guidelines*. IBC registration not required if experiment not covered by Sections III-A, III-B, or III-C	Purchase or transfer of transgenic rodents	III-F

Animal Research Sections

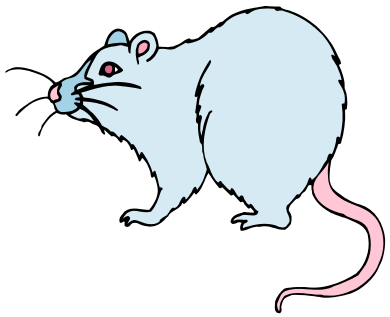
- Section III-D-4 **Experiments involving whole animals**
  - Requires IBC approval BEFORE initiation
  - Experiments in which
    - The animal's genome has been altered by stable introduction of rDNA into germline, or
    - rDNA modified microorganisms are tested on whole animals
    - BSL-2 or greater containment

Animal Research Sections

- Section III-E-3 **Experiments involving the generation of transgenic rodents**
  - Requires IBC notice AT initiation
  - Experiments in which
    - Rodent's genome has been altered by stable introduction of rDNA into germline
    - BL-1 containment is appropriate

Animal Research Sections

- Section III-F (and Appendix C-VI) **Exempt Experiments**
  - The purchase or transfer of rodents for experiments that require BL-1 containment
  - Further manipulation of these animals with recombinant DNA are not necessarily exempt from the NIH Guidelines



NIH Guidelines – the Appendices

- Appendix A – Exemptions: Natural Exchangers
- Appendix B – Classification of Etiologic Agents
- Appendix C – Exemptions under IIIF
- Appendix D – Major Actions
- Appendix E – Certified Host-Vector Systems
- Appendix F – Biosynthesis of Toxic Molecules
- Appendix G – Physical Containment
- Appendix H – Shipment
- Appendix I – Biological Containment

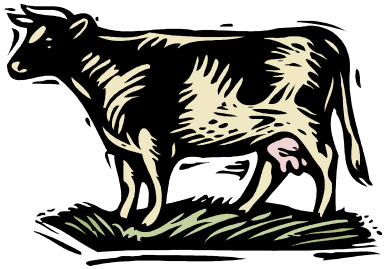
NIH Guidelines – the Appendices

- Appendix J – Biotechnology Research Subcommittee
- Appendix K – Large Scale Physical Containment
- Appendix L – Gene Therapy Policy Conferences
- Appendix M – Points to Consider in Human Gene Transfer Research
- Appendix P – Physical and Biological Containment: Plants
- Appendix Q – Physical and Biological Containment: Animals

Key Portions of the Guidelines

- Appendix B
  - Actual lists of the etiologic agents
- Appendix G
  - Specifies details of containment and confinement for standard laboratory work
  - Defines BL-1 through BL-4
  - Appropriate for animals that are handled in a laboratory setting

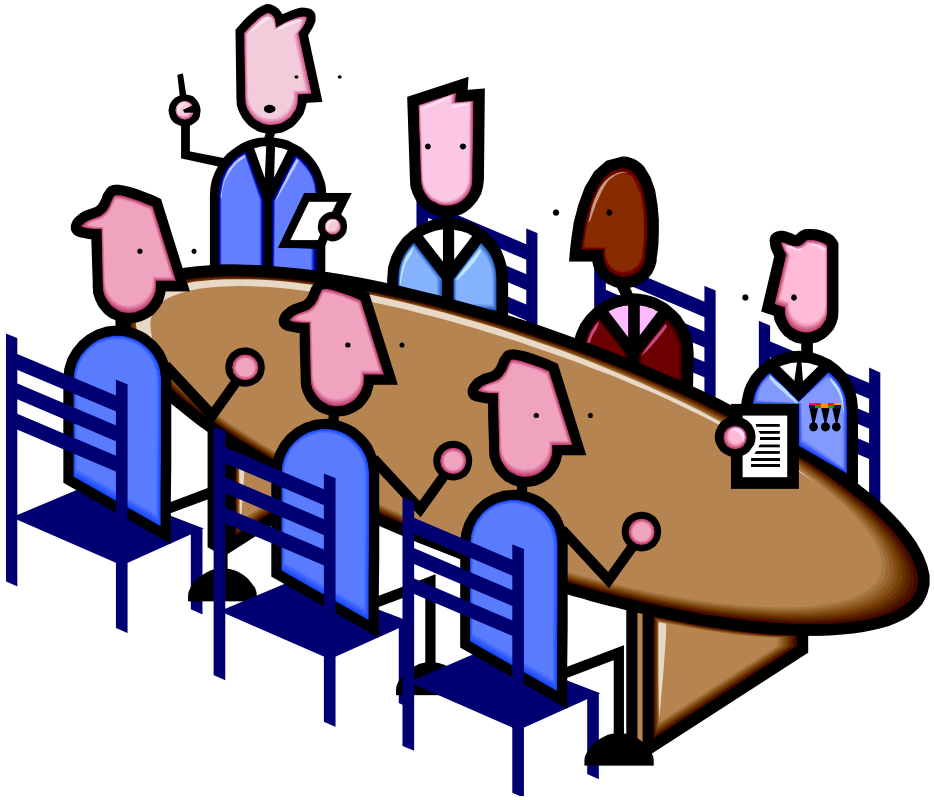
Key Portions of the Guidelines



- Appendix Q
  - Applies to research animals that are not handled in a laboratory setting (cattle, sheep, swine, goats, horses, poultry)
  - Addresses containment/confinement practices in animal facilities (BL1-N to BL4-N)
  - Primates could be under Appendix G or Q, depending on study and use
  - Applies to:
    - Animals in which genome is altered by stable introduction of rDNA, or
    - Animals on which rDNA-modified microorganisms are being tested

Key Portions of the Guidelines

- Appendix M
  - Human gene transfer experiments
  - Includes many considerations related to preclinical studies with animals



IBC Review of Infectious Agent Protocols

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Review of Infectious Agents

- Information does not have to be supplied to NIH
- Select agents/toxins must follow Law, which requires review by an institutional body, often referred to as the IBC, as well as regular inspections, etc.
- Review of protocols is by Committee for BSL2/3/4 agents (usually institutional policy).

Review of Infectious Agents

- Often, BSO can approve work with BSL1, human-sourced materials, etc. Good practice to list these approvals in Minutes for perusal by IBC.
- The above practices should be written in the IBC Handbook.

Pending Biosafety Initiatives

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Pending Biosafety Initiatives

- New edition of NIH Guidelines September 2009
  - Beefs up IBC review of potentially pandemic recombinant influenza viruses
    - Moves human H2N2, 1918 H1N1, HPAI H5N1 to RG3
    - BSL3+ (enhanced) required for work with above
  - New edition (5th) of BMBL referenced

Pending Biosafety Initiatives

- Dual Use
  - Refers to the possibility that legitimate research could be used to threaten public health, agriculture, the environment or national security
  - OBA's activities to address such "dual use" research include convening and managing the **National Science Advisory Board for Biosecurity** (NSABB)
  - The NSABB has developed draft criteria to distinguish dual use research and will embark upon a process of developing guidelines that may eventually define a role for local review groups, such as IBCs, in the oversight of dual use research.
  - FYI – many IBCs are already including “Dual Use” questions in their protocol review process. It is coming…

Pending Biosafety Initiatives

- Proposed change to the NIH Guidelines to replace “recombinant DNA molecules” with “recombinant and synthetic nucleic acid molecules”
  - May bring chemists and engineers into the IBC review process
    - Unaware/unfamiliar with NIH Guidelines and review process
- Amendments to address appropriate level of review for experiments involving >1/2 but <2/3 of the genome of certain viruses

Pending US Legislative Activities

- 1. **Select Agent Program Reauthorization, S. 485/H.R. 1225:**
- Reauthorizes the select agent rules and provides some minor amendments including expanding the criteria for select agent determination, planning for a surge in biological samples during an emergency, establishing an integrated Biological Laboratory Incident Reporting System and developing minimum biosafety and biosecurity training standards. *(bill text available on www.thomas.gov)*

Pending US Legislative Activities

- **2. WMD Prevention and Preparedness Act of 2009, S. 1649 (Lieberman/Collins):**
- The WMD report "World at Risk" crafted by Senators Graham and Talent in 2008, spurred this legislation which proposes several changes that would have a significant impact infectious disease research. *(bill text available on www.thomas.gov)*
- Creates a "Tier I" grouping of select agents would include select agents that have a significant potential to be used effectively in a biological attack, and/or pose a risk which requires additional biosecurity measures.

continued

Pending US Legislative Activities

- **2. WMD Prevention and Preparedness Act of 2009, S. 1649 (Lieberman/Collins): continued**
- Creates, via a negotiated rule-making process, enhanced biosecurity measures applicable to Tier I agents including standards for such items as personnel reliability programs, training for Institutional Responsible Officials and lab personnel and support personnel, training program accreditation, laboratory risk assessments and risk-based laboratory security performance as well as procedures, with appropriate restrictions, on access for sharing information including vulnerability assessments, site security plans, and other security related information, with state, local and tribal governments, law enforcement officials and emergency response providers.
- The legislation places the Department of Homeland Security in a lead role for not only developing but ensuring compliance with the promulgated standards. (This item is not popular with many Biosafety Professionals).

Site Visits by NIH

NIH Site Visits

- Usually NIH schedules 12-24 visits/year
  - Most are “not for cause”
- Before visit, they will request for review:
  - Meeting Minutes, SOPs relative to operation of the IBC, research protocols (indicating the section of the Guidelines they fall under)
- During visit, they will interview PIs and others to determine familiarity with the Guidelines
- They are making many “recommendations” except in cases of gross negligence (these require follow-up from the institution)

Site Visit Program – Positive Practices
(Allen Shipp, NIH, Jan 6, 2010)

- Senior Institutional Official on IBC
  - May be voting or ex-officio, but present at meetings
- IBC Conflict of Interest Policy
- Public access to IBC meetings (in the interest of "transparency")
- Coordination between IBC, IACUC, IRB
  - E.g., transgenic animals (IBC+ IACUC), human gene therapy (IBC+IRB)
- Coordination with Grants and Contract Office
  - Additional checkpoint for compliance with Guidelines

Site Visit Program – Compliance Challenges (Allen Shipp, NIH, Jan 6, 2010)

- Need for greater institutional resources
  - IBC resources compared to those for IACUC and IRB – are they proportional to the volume of research?
- Meeting minutes should contain a level of detail to adequately document fulfillment of IBC responsibilities
- Robust training for IBC members, research staff, and support staff (e.g., animal care)
  - rDNA-focused training for PIs lacking
    - NIH expects PIs to be familiar with Guidelines if they do rDNA research
  - Utilize resources on OBA website, NIH seminars/meetings
  - Document all training

Site Visit Program – Compliance Challenges
(Allen Shipp, NIH, Jan 6, 2010)

- Programs with approval processes that mimic IACUC and/or IRB process (e.g., expedited review for proposals that require discussion and voting)
- Approval of all projects subject to Sections III-A through III-E at a convened meeting with a quorum
  - No e-mail approval for these projects
- Systems to ensure IBC capture of all research subject to the NIH Guidelines
  - IRB, IACUC coordination, Grants and Contracts Office final review

Site Visit Program – Compliance Challenges
(Allen Shipp, NIH, Jan 6, 2010)

- Periodic review of rDNA research
  - IBC to determine interval for review of ongoing research
  - Conduct rigorous laboratory inspections
    - Documentation
    - Frequency
    - Qualification of inspector
    - Inspection standards
- Awareness of incident reporting requirements

Site Visit Program – Compliance Challenges (Allen Shipp, NIH, Jan 6, 2010)

- Health surveillance programs, when required, for personnel involved in rDNA research
- Proper disposal of rDNA waste, including transgenic animals
  - Develop policies and procedures that preclude the entry of animals into food stream (incineration/digestion)
  - Rigorously train staff

NIH Resources and Training Materials

- Listserv: “OBA_NEWS” https://list.nih.gov/archives/oba_news.html
- Incident Reporting Template http://oba.od.nih.gov/rdna_ibc/ibc_training.html
- IBC Self Assessment Form

  http://oba.od.nih.gov/oba/ibc/IBC_Self_Assessment_Tool_June_19_2009_Fillable.pdf
- Experiments that are Exempt Under NIH Guidelines

  http://oba.od.nih.gov/oba/ibc/FAQs/FAQs_about_Experiments_that_are_Exempt_from_the_NIH_Guidelines.pdf
- Animal Experiments Covered Under the NIH Guidelines

  http://oba.od.nih.gov/oba/ibc/FAQs/Animal%20Experiments%20Covered%20under%20the%20NIH%20Guidelines.pdf
- Guidance for IBC Minutes http://oba.od.nih.gov/oba/ibc/IBC_Minute_Q_A.pdf

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